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ABSTRACT

The hypothesis that portraying nontraditional sex roles for men in instructional health pamphlets intended for illiterates and semiliterates does not interfere with the comprehension of the technical information was confirmed. Two versions of a pamphlet on how to prepare and use an oral rehydration salts (ORS) solution with children with diarrhea were prepared for distribution in Mexico. In the first version, the illustrations showed only women involved with the sick child; the second version was identical in every respect except the male caretaker was added to almost every page. Thirty health workers and 200 fathers and mothers (none had more than 6 years of schooling) from low socioeconomic sections of rural and suburban central Mexico were interviewed to determine if they noticed the differences between the pamphlets, which they preferred, and why. Contrary to general belief, the subjects in the study did not reject the idea of the father helping the mother to care for the sick child; the majority preferred the version that included the father figure. Nor did the presence of the father figure interfere with their comprehension of the ORS instructions. These findings have implications for instructional and motivational communication endeavors throughout the developing world. (RM)

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Special Report

Sex Roles in Instructional Materials: Testing the Stereotypes

Margot L. Zimmerman, Maria Elena Casanova, Dianna P. Stern, and Sarah S. Auman

SO 014 460

For the past few years, PIACT, the Program for the Introduction and Adaptation of Contraceptive Technology, has been helping to develop culturally appropriate printed materials that rely mainly on illustrations to explain correct contraceptive use to illiterate and semiliterate family planning acceptors and potential acceptors. We have undertaken these projects because we believe that nonreaders, who constitute 75–80 percent of the adult population in some developing countries, need access to accurate and reliable information to which they can refer when making decisions and following instructions. Our experience has shown that such information is most effectively and economically acquired through the use of the print medium, in conjunction with personalized oral instruction in individual or small group settings.

On the basis of its experience in preparing printed support materials containing pictorial instructions, PIACT has been asked to prepare materials to help nonreaders properly use various health products. PIACT's first health-related pamphlet, on how to mix and give oral rehydration salts (ORS) solution to a child with diarrhea, was designed in Mexico. In 16 pages, this pamphlet imparts such messages as: if your child has diarrhea, take him/her to a clinic where ORS is available; wash your hands before emptying the packet of ORS into one liter of clean water; give a little of the solution to the child following each bowel movement with loose stools; do not give the child other medicine at the same time he/she is taking the ORS treatment; continue to give the child food; if you are nursing the sick child, continue to do so even though he/she is also being given ORS.

The pamphlet was well received in Mexico and is currently being used by the Ministry of Health in a national program to reduce the incidence of infant dehydration. But in the United States there was some criticism over the fact that no men appeared in the illustrations contained in the pamphlet. It was suggested that PIACT was reinforcing stereotypical sex roles since the illustrations show only women involved with the sick child. Was PIACT perpetuating a bias that such activities can only be performed by females?

PIACT staff, both in the United States and in Mexico, was skeptical about adding a male to the pamphlet. "Everyone" knows the aura of machismo surrounding the Mexican male, who considers his role to be family provider while his spouse handles all domestic chores and is the nurturer of children.[1] We were told by social workers and communication personnel that both women and men would ridicule any material that suggested that men could also be involved in child care activities. And if such were the case, encouraging male involvement would only discredit the material and, by implication, the product whose use we were promoting—in this case, oral rehydration salts.

The Study

We decided to undertake a small experiment on sex stereotyping in informational materials for illiterates and semiliterates. Despite the initial skepticism, PIACT began with the hypothesis that portraying nontraditional sex roles for men would not interfere with comprehension of the technical information contained in the pamphlet on how to prepare and use oral rehydration salts (ORS). Using two pamphlets on ORS, identical in every respect except that one

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showed a man (father figure) in all the pictorial messages relating to care of the child with diarrhea, we proposed to test both versions of the pamphlet for individual message comprehension, information recall, acceptability, and pamphlet preference in a small comparative study. While our major emphasis would be on interviewing women who were representative of the recipients of these pamphlets in any ongoing ORS program, we also decided to compare the reactions and preferences of men with young children and health providers when they were shown both versions of the pamphlet.

The study was designed to determine whether (1) the potential users of the pamphlet would object to or reject the idea of the father as purveyor of health care to his sick child; (2) the presence of the father figure was, in any way, an obstacle to message comprehension; and (3) people would prefer a pamphlet with both the mother and father caring for the child with diarrhea, or one that showed only the mother caring for the sick child.

Methodology

In order to have two identical versions of the pamphlet, an artist copied the original printed version and then prepared a revised version that included the male "caretaker." The male "caretaker" was added to almost every page of the revised pamphlet. In most frames, he is shown either assisting or accompanying the woman. In some frames, he is shown working alone—for example, pouring the ORS solution, feeding the child, and dressing the child following his stay on the "potty." The presence of the father—either with the mother or substituting for her—is the only difference found between the two pamphlets.

We divided the women into two groups and gave each a separate test so we could compare two different learning modalities: (1) individual message comprehension as a woman examined the pictures and (2) recall of facts after a fieldworker had reviewed the pamphlet with her, message by message. When testing the men, we decided not to ask them to recall specific tasks, since we felt the entire experience would be new to them and we were reluctant to have them feel threatened or put on the defensive. We were more interested in their comparisons between the two pamphlets—did they notice the differences and, if so, which did they prefer and why.

Two hundred subjects from low socioeconomic sections of rural and suburban central Mexico were included in the study.[2] We wanted our sample population to correspond to the educational level of the sample population used in developing the original ORS pamphlet. Thus, women and men with more than six years of schooling were eliminated from our sample during preliminary interviews (see Table 1).

Other criteria for the selection of study subjects were that subjects be the direct or indirect users of ORS (i.e., mothers and fathers of young children or health workers) and that the mothers either be married to or living with a man.

Interviews with mothers and fathers were carried out in private homes; those with health workers were conducted at their place of employment—Social Security clinics in suburban areas near Mexico City. Each respondent was approached individually. After a brief introduction, potential subjects were told enough about ORS to provide some perspective on what would ensue. Persons who met the criteria for inclusion in our study were interviewed using standard questionnaires prepared to secure data that would enable us to compare the comprehension of the different messages among the different groups.

Two PIACT de Mexico staff members, experienced social workers, were trained by the project director in the interviewing and recording techniques required for this study. Following a day of role-playing, several pilot interviews were conducted to pretest the interview and data collecting instruments, to clarify any doubts, and to correct any possible misunderstandings among the interviewers.

Four different interview forms were designed to correspond to the four groups in this study—Group A,B,C, and D—described below:

Group A

Sixty rural or suburban mothers of young children reviewed the ORS pamphlets without any text. Our design called for 30 subjects to go through the original pamphlet, showing only the mother, while the other 30 would view the revised pamphlet, showing both parents. But as we were analyzing the data, we realized that someone had miscounted and we actually had 28 viewing the original pamphlet and 32 viewing the revised pamphlet. As a PIACT interviewer went through the booklet, page by page, and asked each woman to explain what she saw in the picture about ORS and to interpret the messages on how to use ORS, the PIACT observer recorded the woman's verbal and/or nonverbal comments, interpretations, explanations, and expressions pertaining to each pictorial message.

This was the only group that saw pictures without the text, as we wanted to look solely at their comprehension of pictorial messages. Once the respondents had viewed and interpreted all 16 messages in the pamphlet, they were shown whichever version they had not seen originally, were asked to note any differences between the two versions, and to explain

TABLE 1 Educational levels and family sizes of mothers and fathers viewing original and revised pamphlet

	Group A: women (N=60)		Group B: women (N=80)		Group D: men (N=30)	
	Number	Percent	Number	Percent	Number	Percent
Schooling						
No schooling						
Original	6	21.0	11	27.0	2	13.3
Revised	8	25.0	7	18.0	4	26.7
1–4 years						
Original	19	68.0	28	68.0	11	73.3
Revised	21	66.0	31	80.0	9	60.0
5–6 years						
Original	3	10.7	2	4.9	2	13.3
Revised	3	9.4	1	2.6	2	13.3
Number of children						
2 or less						
Original	7	25.0	10	24.5	3	20.0
Revised	8	25.0	13	33.3	4	26.7
3–5						
Original	16	57.1	23	56.0	9	60.0
Revised	19	59.4	22	56.4	8	53.3
6 or more						
Original	5	17.9	8	19.5	3	20.0
Revised	5	15.6	4	10.3	3	20.0

which version they preferred and why. They were also asked whether they had ever received help from their husbands at home in taking care of a sick child, and if so, to describe the kind of child care help they had received.

Group B

In another test for comprehension and recall following an oral message reinforced by a detailed drawing, 80 rural and suburban mothers of young children reviewed *only one* version of the ORS pamphlet. Again, our subgroups did not turn out to be exactly even. Forty-one women were shown the original pamphlet, while 39 viewed the revised version. Women in both subgroups were from a low socioeconomic background, with most having a maximum of three years of schooling. This group (as well as Groups C and D) viewed the same pictorial pamphlets used by Group A, except that these women also saw a line or two of simple Spanish text. The PIACT fieldworker went through the pamphlet with each woman, page by page, describing and explaining the message portrayed in each illustration. The women were encouraged to ask questions and to make comments; many did so.

Following a detailed explanation (as contained in the illustrations) of when, how, and why to use ORS, the pamphlet was put aside and the woman was asked seven questions based on the information contained in the pamphlet. Since the information provided in both versions of the instructional pamphlets was identical, all 80 women were asked the same questions, in the same order. Responses were noted by the PIACT recorder, who also noted each woman's comments, facial expressions, and any other reactions.

Group C

Thirty health workers (all of them female nurses) from urban and periurban areas around Mexico City were shown both versions of the ORS pamphlet; 15 of them viewed the original version first, while the remaining 15 viewed the revised one first. The health workers received some general information about the pamphlets and how they were used. They were then asked to comment on the material and to give their perceptions and preferences based on their knowledge of the target audience with whom they work. Their responses and comments were noted by the PIACT recorder.

Group D

Thirty fathers of young children were told about ORS and why the pamphlets were being developed; they were then shown both pamphlets. Again, half were shown the original pamphlet first, while half were shown the revised version first. The men interviewed came from low socioeconomic backgrounds and earned no more than 1,500 pesos (under US$70) per

week. Most had completed between two and three years of schooling.

They were given as much time as they wanted to "study" each pamphlet, but once they had finished looking at one they were not permitted to refer back to the first one while examining the second. When they had completed their viewing, the fathers were asked for their opinion on the pamphlets, their preferences, comments, and so forth. Their responses were noted by the PIACT recorder.

Results

The data gathered during this study and summarized in this section yielded two important findings. First, the subjects' comprehension and rate of recall of the technical health care information in the pamphlets were not affected in any significant way by the presence of the father figure being portrayed in nontraditional sex roles. This finding upheld our original hypothesis: portraying new or nontraditional sex roles for men does not interfere with comprehension of the technical information contained in the ORS instructional pamphlet. Second, the majority of both male and female subjects who were exposed to both versions of the pamphlet preferred the version that included the father figure and portrayed him as assisting the mother in caring for the sick child.

Group A: A Test for Individual Message Comprehension

Of the subgroup (N=28) that viewed the original ORS pamphlet and were asked to explain the meaning of the pictorial messages, only a few had trouble verbalizing what the illustrations meant. The same was true of the women (N=32) who "read" from the revised ORS pamphlet. We discovered that several women in both subgroups had trouble with two of the messages: (1) "Don't give the child any other medicine" (while he/she is taking the ORS solution), and (2) "Continue giving the ORS solution to the child whenever he has a loose stool, even during the night." However, their inability to understand was due to their misinterpretation of the meaning of the symbols used, and was unrelated to the presence of either parent in the illustration. To symbolize night, we had used a burning candle. Many women, in both groups, thought the candle was lit because the child had died. Many others said the candle was lit in honor of a saint to ensure the recovery of the child. We had used an "X" when the nurse was explaining that no other medication should be given to the child while he was taking the ORS solution, but found that several women did not know what the "X" symbol meant.

TABLE 2 Number of women correctly explaining selected pictorial messages without text or previous instruction, in original and revised pamphlets

	Original		Revised	
Message[a]	No.	%	No.	%
The child is crying; he has diarrhea.	28	100	32	100
The diarrhea continues, and the parents are worried.	27	96	32	100
The parents take the child to the hospital.	28	100	32	100
Only one liter of the ORS solution should be given in 24 hours, divided into 5 cups each.	27	96	30	94
One cup of the medicine should be given to the child every time he has a loose stool.	28	100	32	100
Continue giving him the medicine even during the night.	21	75	21	66
If the child is being breastfed, this must not be interrupted during ORS treatment.	28	100	32	100

[a]Translated from the original Spanish.

As can be seen in Table 2, we found no significant differences in individual message comprehension (without explanation or instruction) between the women who based their interpretation on the original pamphlet and those who did likewise with the revised pamphlet. The messages chosen for inclusion in Table 2 are those in which the father figure plays a prominent role in the revised version.

After explaining one of the pamphlets, each woman was shown the second pamphlet and asked to look it over. When finished, the PIACT interviewer asked each woman questions about her pamphlet preference and about her personal experiences regarding assistance from her husband in child care.

Forty-one (68 percent) of the 60 women interviewed preferred the revised version of the ORS pamphlet; of these women, 27 (45 percent) gave reasons relevant to the subject matter of the study, such as: "The presence of both parents makes the picture more complete" (N=5); "So that the men will see that

not only the woman can take care of the children, the two should share in caring for the sick child" (N=12). The other 14 women gave reasons unrelated to the subject of the study (e.g., "It explains the drawing better," etc.).

Eighteen (30 percent) of the 60 women preferred the original version of the ORS pamphlet, but only eight of those gave reasons related to the study: "The mother is the one who cares for the children" (N=4); "The father is not at home to take care of the children" (N=4). The other ten gave reasons unrelated to the study, including such false perceptions as "the paper is thicker" or "the drawings are clearer."

One person out of the entire group of 60 thought that both pamphlets gave the same message, that the two pamphlets were very good, and that it did not matter which one was used.

Thirty-eight (63 percent) of the women said their husbands do help them when the children are ill. Fifty-four (90 percent) of the women agreed that the husband should help his wife when a child is sick, because: "Both parents have the same obligation toward the children" (N=27); "It shows his interest in cooperating with her—this she likes" (N=17); "Two heads are better than one" (N=4); "They should help whenever they can" (N=2); "I would like him to help me, but he doesn't want to" (N=2); "It took both of them to have the child, so they should both help" (N=3). Six (10 percent) of the women did not agree that the men should help with their sick child, because: "The men have to work" (N=4); "It isn't the same when the father cares for the sick child as when the mother does" (N=1); "They never worry about the children" (N=1).

Group B: A Test for Recall

This group was given a test for comprehension and recall of instructions imparted, to determine whether the presence of a male figure interfered with the women's ability to remember the specific ORS instructions. Of the 80 women interviewed, 41 were shown only the original version of the ORS pamphlet, while the other 39 viewed only the revised version. Responses to some of the questions asked after the pamphlet had been explained are as follows. (For a list of all questions and number of respondents giving correct answers, see Table 3.)

What would you do if your child had diarrhea? Of the women who examined the original version, 28 (68 percent) answered correctly that they would first take the child to the "hospital";[3] four women (10 percent) said they would give him some medicine in the form of a syrup for the stomach; five (12 percent) said they

TABLE 3 Number of women correctly answering questions testing for recall of instructions in original and revised pamphlets

	Original (N=41)		Revised (N=39)	
Questions	**No.**	**%**	**No.**	**%**
What would you do if your child had diarrhea? (Answer given in pamphlet: Take child to clinic.)	28	68	29	74
How often should ORS be given in one day? (Answer: After each instance of diarrhea.)	36	88	36	92
How much ORS solution should the child be given? (Answer: One liter, in 5 cups.)	35	85	36	92
Should you stop breastfeeding your infant while he/she is taking ORS? (Answer: Mother should continue breastfeeding.)	36	88	38	97
Should you feed a child who is taking ORS? (Answer: It is important to feed the child while he/she is taking ORS.)	38	93	37	94
Is it alright to give the child other medicines while he/she is taking ORS? (Answer: Do not give the child any other medicine.)	34	83	37	94
How do you prepare ORS solution? (Of five steps given in the pamphlet, number remembered):				
5	1	2.5	2	5
4	12	29	12	31
3	14	34	14	36
1 or 2	14	34	11	28

would give him tea with a tablet of "terramicina"; and four (10 percent) said they would give the child a tablet and plenty of liquids. Of the women who examined the revised version, 29 (74 percent) answered correctly that they would take the child to the "hospital"; five women (13 percent) said they would give the child some tea; three (8 percent) said they would buy some medicine at the pharmacy; and two (5 percent) said they would "stop feeding the child milk."

How often should you give the ORS solution to the child in one day? Of the women who examined the original version, 36 (88 percent) answered correctly "after the child had a loose stool"; three women (7 percent) said every five hours; and two (5 percent) said a small amount every two hours. Of the women who examined the revised version, 36 (92 percent) answered correctly that they would give the child a cup of the solution every time he/she had a loose stool; one woman said she would give the child the liquid once every 24 hours; and two women (5 percent) said they would administer the solution four times daily.

How much ORS solution should you give the child in one day? Of the women who examined the original version, 35 (85 percent) answered correctly "one liter in small portions"; two women said five liters daily; and one answered "a little every day." Three women did not answer the question. Of the women who examined the revised version, 36 (92 percent) answered correctly "one liter in small quantities"; one woman said "one cup"; another said "one-fourth of a liter"; and a final woman said "one jug full."

Is it alright to give the child other medicines while he/she is being treated with the ORS solution? Of the women who examined the original version, 34 (83 percent) answered correctly that medicines should not be mixed; seven (17 percent) said they could still receive other medicines while on ORS. Of the women who examined the revised version, 37 (94 percent) answered correctly that no other medicines should be given; two (5 percent) said it would be alright to mix medicines.

How would you prepare the ORS solution? Of the women who examined the original version, 14 women (34 percent) mentioned one or two of the five steps correctly; 14 (34 percent) correctly mentioned three steps; 12 (29 percent) mentioned four steps; and only one (2.5 percent) was able to recall all five steps correctly. Of the women who examined the revised version, three (8 percent) correctly mentioned one step only; eight (20 percent) mentioned two steps; 14 (36 percent) remembered three steps; 12 (31 percent) knew four steps; and two women (5 percent) remembered all five steps correctly.

As Table 3 indicates, the presence of a male figure did not interfere with the ability of the women who had seen the revised version to recall the instructions and messages. The two subgroups were quite similar in their ability to provide correct answers to the questions. As a matter of note, the women who were shown the revised version had slightly but not significantly higher scores on recall than the women who were tested on the original pamphlet.

All the women interviewed were very interested in ORS, since they do not like to put their children in the hospital. Some of them mentioned various home remedies they give their children with diarrhea, such as herbal teas or soda water with orange juice, but mentioned that physicians usually prescribe some other medications along with the solution for diarrhea.

None of the women who saw the revised pamphlet commented on the fact that both father and mother were taking care of the child. Only one woman, as indicated by a surprised facial expression, reacted in any way to the father's preparing the ORS solution.

Group C: A Test among Health Workers

Of the 30 health workers (female nurses) interviewed, 15 analyzed the original version of the pamphlet first and then the revised version. The other subgroup of 15 did the reverse. The results from this group were as follows.

Twenty-six of the health workers (87 percent) said the two pamphlets explained the preparation and administration of the ORS solution equally well. Ten of these 26 realized that the father was portrayed in one of the pamphlets helping the mother to care for the sick child. Nevertheless, they affirmed that the two pamphlets were the same in all other respects. The four remaining health workers thought the original pamphlet was clearer, and emphasized that it is in fact the mother who is with the child most of the time.

When asked which of the pamphlets they would use to show families how to prepare and administer ORS correctly, 20 of the 30 health workers (67 percent) chose the revised pamphlet. Seven of them said, "It is more complete because it shows both the father and the mother"; five said, "The father should have the same obligation as the mother, and this pamphlet encourages the man to assist his wife"; and two said, "It is important that the father participates, since the children's problems concern both parents." The remaining six health workers mentioned reasons

for their preference that were unrelated to the study and based on false perceptions, such as "larger drawings," "better photographs," and "more pages."

Eight of the health workers (27 percent) preferred the original version of the ORS pamphlet, with six of them saying that "It is the mother who spends more time with the children." The other two health workers gave irrelevant reasons based on false perceptions, such as "thicker paper" or "brighter drawings."

Group D: Determining the Perceptions of Men

Thirty men were interviewed to determine their reactions to both versions of the ORS pamphlet, as well as their preferences. All men were shown both pamphlets and asked to view them slowly, after which they were asked several questions. These questions and the men's responses follow:

Is there any difference between these two pamphlets? If so, what are they? Eighteen of the men (60 percent) said they did notice a difference; 15 of these men pointed out that one pamphlet showed both parents. The other three men noted disparities unrelated to the study ("type of paper," "the wall is peeling," etc.).

Which pamphlet do you think is better and why? Twenty-one of the men (70 percent) preferred the revised version; 16 of these gave one or more of the following reasons: "It is the obligation of both parents to care for a sick child"; "That is how the man ought to help his wife"; "It is more complete because both parents are present." Five of the men who preferred the revised version of the pamphlet gave reasons unrelated to the study.

What do you think of a father helping to take care of his sick child? Twenty-five men (83 percent) gave positive answers to this question, saying one or more of the following: "The man should help his wife because it is their mutual responsibility to care for a sick child"; "It is important that the father helps"; "They should both help with the child." Five men (17 percent) did not feel the father should help in caring for his sick child, saying either, "The man is never home," or "The father does not have time."

Have you ever helped in caring for your sick child? If so, in what way? Twenty-one men (70 percent) said they had helped their wives care for their children when they were ill. The ways in which they had helped included: "I've taken sick children to the doctor"; "I have given the child his medicine at night"; "I do whatever is necessary to help"; and "I clean the child when he has diarrhea."

Discussion

Little or no research has been done on illiterate or semiliterate men's attitudes toward helping with sick children in developing countries. As a population, this group has been grossly neglected by the conventional approaches to health in developing countries. There has been an increasing awareness of the "changing roles of women" but almost a complete lack of data on the roles of men. According to Safilios-Rothschild, "While the roles of women are changing unevenly and at different speeds in different societies, the roles of men are also undergoing changes which may not necessarily correspond to changes taking place in the women's roles."[4] Safilios-Rothschild has studied the role of the family in development and concluded that, among the poor, family organization is characterized by flexibility. "The criteria for distributing resources and responsibilities within families in developing countries do not coincide with Western criteria of development needs and requirements. Nor do sex and age, especially among the poor, determine the roles people play in the family."[5] Following her line of reasoning, it is perhaps not so surprising that the predominantly low-income Mexicans who comprised most of our study population responded favorably to seeing a man in what middle- and upper-middle-class men and women in Mexico and in developed countries consider to be traditional female roles. And similarly, our group of nurses, also educated to favor traditional role models for men and women, were less enthusiastic about the presence of a man in a book on child care than were the mothers and fathers from low socioeconomic levels.

According to Stokes, recent studies have found that men have much more interest in family planning and a willingness to practice it than they are given credit for.[6] Although an earlier study found that Mexican men wanted large families and viewed their wives as mothers, housewives, and as a means of sexual satisfaction,[7] Stokes says that these conclusions give a one-dimensional image of the Mexican male. Most men surveyed by Stokes rejected machismo behavior in *other* men, especially the attitude that having a large family makes someone feel more manly. The vast majority of those he interviewed also believed that "in general, one should limit the number of children," citing the economic benefits of smaller families as well as concern for the future welfare of their existing children. Stokes also found that poverty, not male chauvinism, often shapes men's attitudes.

In Nigeria, where care of seriously ill children is often relegated to fathers, men are very receptive to

learning how to administer oral rehydration fluid in the home. By so doing, they have found they can avoid the distress of sharing in the child care tasks when their children become seriously ill. This usually involves buying expensive drugs and carrying the child great distances to seek help.[8]

In a paper on fertility decision-making within the household, Hollerbach suggests that, within Latin American lower- and working-class populations, experiments with programs designed to educate and involve men, utilizing male health personnel and community workers, seem particularly worthwhile.[9] Studies in these communities indicate that the male peer group, rather than the family, may be the source of identification and social approval, as well as the major source of influence on fertility norms and behavior. Many of the sociological and economic evaluations of development projects have overlooked the structure, dynamics, and behavior patterns of the family. Hollerbach feels that more basic research on the poor in developing countries is needed so that data explaining observed patterns of change and the effects of development efforts to alleviate poverty can guide planners and programmers.

A case study to illustrate this need was done in an area of Kenya where the kwashiorkor rate among children dropped from 55 percent to 39 percent just 18 months after the fathers of the affected children were made aware of the nutritional problem and became involved in its solution, using locally available resources.[10] Prior to the active participation of the fathers, who decide what foods are to be given to children in this area of Kenya, years of conventional nutrition education at maternal and child health clinics had been directed toward the mothers, who actually feed the children. Had the clinic programmers first gone to the villages to identify the decision-makers—hence the potential problem solvers in this case—years of wasted effort could have been avoided. What ultimately moved educational efforts out of the clinic and into the villages was a simple statement made by one of the fathers during a village meeting with district health officials to discuss the continuing high rates of kwashiorkor: "If this [kwashiorkor] is such a problem, why hasn't it been brought to the attention of the elders? When wild pigs destroy our crops or other calamities threaten village life, the elders are always consulted. . . . Certainly we should be consulted on matters that involve the lives of our children. . . . We don't get pregnant, so why would we go to the Women's Clinic [MCH clinic] to learn of this problem?"

This Kenyan study of the extent to which men want and need to be involved, coupled with PIACT's recent findings, again point out the mistake development planners make in focusing almost exclusively on women and, perhaps unconsciously, using stereotypes to define roles women should play when the subject is health—especially child health.

Conclusion

Contrary to general belief, the subjects in this PIACT study did not reject the idea of the father helping the mother to care for the sick child; nor did the presence of the father figure interfere with their comprehension of the ORS instructions. These unexpected and collective results have significant implications for future materials-development work in Mexico. They also have implications for instructional and motivational communication endeavors throughout the developing world.

Our hypothesis, that portraying nontraditional sex roles for men in ORS instructional pamphlets does not interfere with comprehension of the technical information contained in the pamphlets, was upheld in this study. More importantly, we found that the majority of male and female subjects who were exposed to both versions of the ORS pamphlet preferred the version in which a father figure appeared performing nontraditional sex roles. Collectively, these findings demonstrate that in our study population the simultaneous presentation of nontraditional sex roles with technical instructive messages is both compatible and advantageous. The simultaneous presentation is advantageous because it has the potential for reaching a wider audience. Widescale distribution and use of this version of the pamphlet throughout the population might mean communication to a much larger audience, as men might be attracted to and/or included in the target audience. Furthermore, this larger audience of both parents would also receive messages on two different levels: on the surface, technical instruction on correct health care will be transmitted; and then just beneath the surface, is the behavioral message that it is acceptable—and perhaps even desirable—for fathers to play a key role in the care and nurturing of their children. A male presence in these pictorial messages might, in fact, contribute toward modifying behavior and defining new sex roles for men. If this were the case, it would mean doubling the human resources available to children for informed and appropriate home health care in times of illness.

Whether or not the goal of a health education communications project is to transmit both instructional and behavioral modification messages, our subjects preferred the version of the ORS pamphlet in which both messages were presented. And, pref-

erence in itself is a powerful element in motivation for learning and changing—whether it be at the cognitive level only or at both the cognitive and behavioral levels. Therefore, when program planners are motivating men to take a larger role in caring for the family's health, they should consider exposing men to materials similar to the ORS pamphlet that contained a father figure.

What PIACT has learned from this study is likely to alter our approach to the development of instructional print materials that are primarily pictorial. On all health, nutrition, and family planning topics that are not of necessity sex-specific, men will be included in the initial phases of materials development to ensure their full participation and subsequent representation in whatever final products are developed. Whenever appropriate, males will be portrayed helping women and children in messages regarding parental assistance to children. In all family planning materials, PIACT has been careful to portray husbands and wives discussing the various methods of contraception, and we usually show the husband accompanying his wife to the family planning clinic. But in our health materials, especially those involving children, we have tended to reinforce society's bias and have shown only women feeding and caring for children.

As a result of this study, we feel that the use of ORS pamphlets in which men are portrayed should reach a larger audience, transmit technical information, and might even assist in breaking the perpetuation of traditional stereotypic sex roles for women. When it is time to reprint those materials, we recommend that serious consideration be given to substituting our revised version for the original version currently used in Mexico. We encourage all program personnel engaged in producing family planning, health, and nutrition materials to include a role for fathers as a natural adjunct of their "parenting." We also recommend that other organizations in other countries conduct studies similar to this study to determine whether our findings are transferable to other societies whose child health care materials make women solely responsible for the care of their young.

References and Notes

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